

### Abstract of the Disclosure

In an apparatus having a combustion engine and an emissions system including a catalytic converter and a metal oxide catalyst disposed downstream of the catalytic  
5 converter, a method of controlling a chemical transformation of hydrogen sulfide in an emissions stream to a less-noxious sulfur-containing compound is disclosed. The method includes reacting the hydrogen sulfide with the metal oxide catalyst to form a metal sulfide, monitoring a saturation of the metal oxide catalyst with the metal sulfide, and  
10 when a predetermined saturation of metal sulfide on the metal oxide is reached, changing an air/fuel ratio supplied to the combustion engine.